



LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA16 | Ladbroke and Southam

Baseline (SV-002-016)

Sound, noise and vibration

November 2013

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Appendix SV-002-016

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Baseline	002
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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas.
- 1.1.2 For the Ladbroke and Southam area (CFA16), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-016) (this appendix);
 - construction sound, noise and vibration (Appendix SV-003-016); and
 - operational sound, noise and vibration (Appendix SV-004-016).
- 1.1.3 Maps referred to within this appendix are contained in the Volume 5 map book.
- 1.1.4 This appendix includes details of the existing and future baseline sound environment within the area. It provides details of measurements and any other data collection which has been undertaken in order to obtain existing and future baseline sound levels.

1.2 Existing acoustic environment

- 1.2.1 The study area is predominantly rural in character, with agriculture the predominant land use. The southern part is the most sparsely populated, with only a scattering of isolated farmsteads between Wormleighton and Ladbroke. The A423 (Banbury Road/ Southam Road), which runs from Banbury, Oxfordshire in the south to Coventry in the north, is the main transport route through the area, together with the A425 (Leamington Road) west-east route from Leamington Spa to Daventry. The noise climate is, therefore, dominated by natural sound sources with contributions from transportation noise from a number of roads, namely the A423, A425, Welsh Road and B4451 (Kineton Road).
- 1.2.2 In the agricultural areas to the north west of Southam, near the village of Bascote, ambient noise levels are dominated by natural sound sources, with contributions from distant road traffic noise from the A425 and Welsh Road. The typical baseline noise levels in these areas are 45-50dB¹ during the day and 35-40dB² at night.
- 1.2.3 The town of Southam is the largest settlement in the study area and extends to within 600m of the Proposed Scheme. In the southern residential areas of Southam, the soundscape is characterised by local road traffic with contributions from distant traffic noise from the A425 and A423 (Banbury Road) during both day and night-time periods. In these areas, typical daytime and night time baseline noise levels are 60-65dB³ and 55-60dB⁴, respectively. In the industrial area the noise climate is dominated by constant road traffic noise from the A425 and the B4451 as well as noise from

¹ 16-hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, $L_{pAeq,16hr}$.

² 8-hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, $L_{pAeq,8hr}$.

³ 16 hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, $L_{pAeq,16hr}$

⁴ 8-hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, $L_{pAeq,8hr}$.

within the industrial estate, and baseline noise levels are generally 60-65dB³ during the day and up to 60dB⁴ at night.

- 1.2.4 The village of Ladbroke is located in the rural area to the west of the A423. Close to this main transportation route, road traffic noise dominates the acoustic environment and noise levels are consistent during both day and night-time periods. In rural areas away from the A423, the soundscape is characterised by natural sound sources and distant road traffic noise, as well as sporadic aircraft noise. Typical baseline sound levels within Ladbroke are 50-55dB³ during the daytime increasing to 55-60dB³ in the vicinity of the B423 Banbury Road to the east. At night sound levels are typically 40-45dB⁴ and 50-55dB⁴ respectively.
- 1.2.5 In the agricultural area south of Ladbroke, around the village of Wormleighton, the noise climate is dominated by natural sound sources with distant road traffic noise from A423 (Banbury Road) contributing to the soundscape. Within the residential village of Wormleighton, the noise climate is characterised by local traffic road and natural sound sources (i.e. wind in trees) with the occasional contribution from farming equipment and human activities during the daytime, with typical baseline noise levels of 55-60dB³. During the night-time period, natural noise sources dominate, with baseline noise levels in the range of 45-50dB⁴.

2 Scope, assumptions and limitations

2.1 Sound and vibration sensitive receptors

2.1.1 Within the Ladbroke and Southam area, 89 assessment locations have been defined to represent all sound and vibration sensitive receptors within the spatial scope. The assessment locations are shown on the detailed maps in Map Series SV-03 and SV-04 (Volume 5 CFA16 map book). Within this area, the following types of sound and vibration sensitive receptors have been identified:

- residential areas;
- community centres and meeting facilities;
- places of worship; and
- healthcare facilities.

2.2 Local engagement

- 2.2.1 Meetings have been held with representatives of Stratford-on-Avon District Council regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors and the selection of assessment locations.
- 2.2.2 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this appendix.
- 2.2.3 Representatives of Stratford-on-Avon District Council have also attended baseline sound measurements in this area and witnessed the measurement procedures used.
- 2.2.4 Local engagement through community forum meetings has also provided the opportunity for local groups to suggest appropriate baseline sound monitoring locations. Any suggestions received from these groups have been considered and influenced the monitoring undertaken and reported in this document.

2.3 Existing baseline sound monitoring locations

- 2.3.1 Baseline monitoring locations have been defined in order to provide representative sound levels at each assessment location within the study area.
- 2.3.2 Baseline information has been gathered incrementally through successive rounds of field surveys focused on locations where likely significant effects are forecast.
- 2.3.3 Areas within the study area where baseline data is required have been broken down into a series of smaller sub-areas. Each of these is representative of clusters of receptors where the noise climate is influenced by the same sound sources. Within each of the sub-areas, a programme of unattended monitoring has been undertaken, supplemented by attended measurements to ensure good coverage at all the identified sound assessment locations. All attended measurements have been undertaken simultaneously with the unattended measurements to allow a direct comparison between assessment locations to be established.

- 2.3.4 After each successive round of field surveys, the collected data has been analysed, and based upon feedback from on-going stakeholder dialogue, the measurement locations refined for subsequent rounds.
- 2.3.5 Maps showing the baseline sound monitoring locations and assessment locations with this area are included in Map Series SV-03 and SV-04 (Volume 5 CFA16 map book).

3 Environmental baseline

3.1 Existing baseline data collection methodology

- 3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Appendix SV-001-000.
- 3.1.2 Over the Ladbroke and Southam area, a number of baseline sound measurements have been undertaken. These have been classified as follows:
- eleven long-term measurements – unattended measurements of several days duration; and
 - fifteen short-term measurements – attended measurements typically of 30 minutes duration (generally repeated at different times of day).
- 3.1.3 In the agricultural area to the north west of Southam, in the vicinity of the village of Bascote, there are a number of isolated properties in a rural setting. In order to assess the noise climate at these properties, three long-term noise monitoring positions were established, namely adjacent to Welsh Road, at Dallas Burston Polo Grounds and at Bascote Heath. Additional day and night-time short-term measurements were undertaken in the vicinity of Burley Stud Farm.
- 3.1.4 In the southern areas of Southam the noise climate is dominated by road traffic noise, both local and distant. Seven day unattended baseline sound monitoring has been carried out at two locations along the A425 (Leamington Road). One long-term measurement was undertaken in the southern residential area of Southam, while an additional monitoring position was set up in the vicinity of the Dallas Burston Polo Grounds. Simultaneous short-term measurements were carried out at different times of day and night in the residential area of Southam on Warwick Road, Beach Close, Stowe Drive and Old Road. One additional satellite measurement was also carried out in the Kineton Road Industrial Estate, located south of Southam, on Kineton Road (B4451).
- 3.1.5 The village of Ladbroke is situated in a predominantly agricultural area to the west of the A423 (Southam Road/ Banbury Road). Within the residential area of the village, the soundscape is characterised by distant road traffic noise from the A423 Banbury Road, while away from this main transportation route the noise climate is dominated by natural noise sources. One long-term noise monitoring position was set up adjacent to the A423 north of the village with further long-term measurements being undertaken in the more agricultural areas around Ladbroke, namely agricultural areas off Windmill Lane and the B4451. These measurements were supplemented with both day and night-time short-term measurements located near to noise sensitive receptors on Southam Road, Windmill Lane, School Lane and Banbury Road, as well as at isolated rural properties on Radbourne Lane. All satellite monitoring locations were visited at various times of the day and night and were undertaken simultaneously with the longer duration monitoring to allow good correlation between the two locations.
- 3.1.6 To investigate the noise climate in the more rural areas in the south of the study area, measurements were carried out at a number of isolated locations in the study area.

Long-term noise monitoring was undertaken at three agricultural locations, namely at off Windmill Lane, and in the vicinity of Wormleighton Grange Farm and Glebe Farm. Simultaneous short-term measurements were taken along Leisure Drive as well as within the residential area of the village of Wormleighton.

3.2 Existing baseline sound levels

3.2.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:

- Baseline levels used for the operational sound assessment:
 - $L_{pAeq,16hr\ weekday}$ daytime (07:00-23:00) sound pressure level;
 - $L_{pAeq,8hr\ weekday}$ night-time (23:00-07:00) sound pressure level;
 - arithmetic average of $L_{pAFmax,5min}$ night-time sound pressure level; and
 - highest $L_{pAFmax,5min}$ night-time sound pressure level.
- Baseline levels used for the construction sound assessment:
 - Daytime L_{pAeq} sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00);
 - Evening / weekend L_{pAeq} sound pressure level (Monday to Friday 19:00-23:00; Saturday 13:00-23:00; Sunday 07:00 to 23:00); and
 - Night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00-07:00);

3.2.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Appendix SV-001-000.

Table 1: Existing baseline sound levels

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵	
			For operational sound assessment				For construction sound assessment				
			Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average of night-time $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime $L_{pAeq,12hr}$	Evening/Weekend L_{pAeq}	Night-time L_{pAeq}		
231410	Stoneythorpe, Southam	CN041L	50.5	41.2	54.0	69.0	51.1	47.1	41.6	1,C,i,c	
232700	Bascote Road, Ufton, Leamington Spa	CN075L	54.1	50.6	63.1	91.5	58.2	51.7	52.0	1,C,ii,c	
232805	Bascote, Southam	CN064S	63.7	51.9	62.3	79.2	65.1	61.5	52.7	2,A,i,b	
232831	Leamington Road, Ufton, Leamington Spa	CN030L	41.4	32.7	38.3	56.5	42.3	39.4	33.5	1,C,i,c	
232863	Welsh Road West, Bascote, Southam	CN030L	43.4	34.7	42.3	60.5	44.3	41.4	35.5	1,A,i,b	
233010	Bascote, Southam	CN064S	48.7	36.9	47.3	64.2	50.1	46.5	37.7	2,C,ii,c	
233039	Bascote, Southam	CN064S	48.7	36.9	47.3	64.2	50.1	46.5	37.7	2,C,ii,c	
233106	Southam Road, Ufton, Leamington Spa	CN041L	45.5	36.2	49.0	64.0	46.1	42.1	36.6	1,C,ii,c	
233194	Stoneythorpe, Southam	CN041L	45.5	36.2	49.0	64.0	46.1	42.1	36.6	1,C,ii,c	
233308	Featherbed Lane, Bascote Heath, Southam	CN075L	46.1	42.6	52.1	80.5	50.2	43.7	44.0	1,A,i,b	
233618	Bascote, Southam	CN030L	43.4	34.7	42.3	60.5	44.3	41.4	35.5	1,A,i,b	
235951	Snowford, Long Itchington, Southam	CN115S	48.6	38.3	45.2	47.3	49.3	47.1	61.2	2,A,i,c	
236207	Snowford, Long Itchington, Southam	CN115S	48.6	38.3	45.2	47.3	49.3	47.1	39.1	2,A,i,c	
236543	Wormleighton, Southam	CN071S	50.4	36.9	50.7	55.7	51.4	49.1	36.9	2,C,i,c	

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Table 2 provides a data source coding key.

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵	
			For operational sound assessment				For construction sound assessment				
			Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average of night-time $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime $L_{pAeq,12hr}$	Evening/Weekend L_{pAeq}	Night-time L_{pAeq}		
236568	Wormleighton, Southam	CN071S	50.4	36.9	50.7	55.7	51.4	49.1	36.9	2,C,i,c	
236676	Wormleighton, Southam	CN071S	55.4	36.9	60.7	65.7	56.4	54.1	36.9	2,A,i,c	
236736	Wormleighton, Southam	CN198S	59.9	49.1	54.3	81.0	60.7	58.2	50.1	2,B,ii,c	
236813	Wormleighton, Southam	CN071S	55.4	36.9	60.7	65.7	56.4	54.1	36.9	2,A,i,c	
236844	Wormleighton, Southam	CN071S	52.4	36.9	60.7	65.7	53.4	51.1	36.9	2,C,ii,c	
237438	Ladbroke, Southam	CN197S	59.4	56.0	64.6	84.2	62.5	58.4	57.5	2,C,i,c	
237620	Ladbroke, Southam	CN197S	53.4	50.0	52.6	72.2	56.4	52.4	51.5	2,C,ii,c	
237700	Ladbroke, Southam	CN197S	54.4	51.0	54.6	74.2	57.5	53.4	52.5	2,C,i,c	
237878	School Lane, Ladbroke, Southam	CN196S	56.4	38.1	60.6	80.2	59.4	55.4	40.5	2,C,ii,b	
237984	Ladbroke, Southam	CN196S	60.4	42.1	63.6	83.2	63.4	59.4	44.5	2,C,ii,b	
238088	Banbury Road, Southam	CN078L	39.5	34.7	48.6	68.2	39.9	36.4	35.0	1,BC,ii,c	
238174	Ladbroke, Southam	CN066S	51.7	40.0	45.9	51.5	52.7	50.5	40.0	2,C,ii,c	
238218	Windmill Lane, Ladbroke, Southam	CN065S	55.2	46.2	46.9	68.7	56.2	54.0	46.2	2,C,i,c	
238281	Banbury Road, Southam	CN065S	52.2	43.2	46.9	68.7	53.2	51.0	43.2	2,BC,i,c	
238331	Banbury Road, Southam	CN065S	70.2	61.2	61.9	83.7	71.2	69.0	61.2	2,A,i,c	
238388	Hedges Close, Ladbroke, Southam	CN065S	50.2	41.2	44.9	66.7	51.2	49.0	41.2	2,C,ii,c	
238540	Radbourne Lane, Ladbroke, Southam	CN032L	48.5	43.0	53.0	65.0	49.5	47.3	43.0	1,A,i,b	
238586	Radbourne Lane, Ladbroke, Southam	CN067S	44.1	38.6	51.1	54.3	45.1	42.8	38.6	2,A,i,c	
238688	Radbourne Lane, Ladbroke, Southam	CN067S	42.1	36.6	47.1	50.3	43.1	40.8	36.6	2,C,ii,c	

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵	
			For operational sound assessment				For construction sound assessment				
			Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average of night-time $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime $L_{pAeq,12hr}$	Evening/Weekend L_{pAeq}	Night-time L_{pAeq}		
238783	Wormleighton, Southam	CN079L	42.1	40.2	49.0	76.4	47.1	42.6	41.1	1,BC,ii,c	
238819	Wormleighton, Southam	CN080L	55.7	52.3	54.3	81.0	56.5	54.0	53.3	1,B,ii,c	
238896	Lower Radbourne, Southam	CN079L	40.1	38.2	45.0	72.4	45.1	40.6	39.1	1,BC,ii,c	
238957	Ladbroke, Southam	CN033L	41.6	34.0	43.0	68.1	43.6	39.2	34.3	1,A,i,b	
239026	Lower Radbourne, Southam	CN079L	40.1	38.2	39.0	66.4	45.1	40.6	39.1	1,C,ii,c	
239092	Upper Radbourne, Southam	CN033L	41.6	34.0	43.0	68.1	43.6	39.2	34.3	1,A,i,c	
239286	Windmill Lane, Ladbroke, Southam	CN033L	41.6	34.0	43.0	68.1	43.6	39.2	34.3	1,A,i,b	
239591	Banbury Road, Southam	CN119S	56.7	48.5	69.2	71.9	57.2	53.2	48.9	2,BC,ii,c	
239943	Banbury Road, Southam	CN065S	60.2	51.2	56.9	78.7	61.2	59.0	51.2	2,BC,i,c	
240161	Holywell Business Park, Northfield Road, Southam	CN041L	50.5	41.2	54.0	69.0	51.1	47.1	41.6	1,C,ii,c	
240376	Beech Close, Southam	CN118S	48.7	39.1	49.5	58.4	49.2	45.8	39.5	2,A,i,c	
240604	Station Road, Southam	CN077L	49.3	46.7	55.2	77.8	49.7	49.5	47.5	1,B,ii,b	
240636	Station Road, Southam	CN117S	64.8	50.7	65.8	73.1	65.4	61.3	51.1	2,C,i,c	
240670	Kineton Road, Southam	CN117S	54.8	45.7	65.8	73.1	55.4	51.3	46.1	2,C,ii,c	
240744	Stoneythorpe, Southam	CN041L	55.5	46.2	59.0	74.0	56.1	52.1	46.6	1,A,i,b	
240763	Warwick Road, Southam	CN076L	57.0	52.7	58.7	76.2	57.9	55.0	52.6	1,B,i,b	
240780	Leamington Road, Southam	CN076L	55.0	50.7	61.7	79.2	55.9	53.0	50.6	1,A,i,b	
240829	Welsh Road West, Southam	CN031L	46.1	37.7	45.5	72.9	48.3	46.6	39.5	1,A,i,b	
240879	Welsh Road West, Southam	CN031L	46.1	37.7	45.5	72.9	48.3	46.6	39.5	1,A,i,b	

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵	
			For operational sound assessment				For construction sound assessment				
			Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average of night-time $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime $L_{pAeq,12hr}$	Evening/Weekend L_{pAeq}	Night-time L_{pAeq}		
241232	Kineton Road, Southam	CN117S	61.8	60.7	75.8	83.1	62.4	58.3	61.1	2,B,i,c	
241272	Banbury Road, Southam	CN078L	49.5	44.7	52.6	72.2	49.9	46.4	45.0	1,C,ii,b	
241411	Bourne End, Kineton Road Industrial Estate, Southam	CN117S	56.8	55.7	70.8	78.1	57.4	53.3	56.1	2,B,i,c	
241737	Kineton Road, Southam	CN116S	54.0	44.6	53.4	66.7	54.5	50.5	45.0	2,BC,i,c	
241800	Hurst Road, Southam	CN041L	55.5	46.2	59.0	74.0	56.1	52.1	46.6	1,A,i,c	
242117	Old Road, Southam	CN194S	62.8	61.1	58.7	76.2	64.3	60.8	61.0	2,A,i,b	
242240	Elm Close, Southam	CN118S	48.7	39.1	49.5	58.4	49.2	45.8	39.5	2,A,i,c	
242487	Old Road, Southam	CN194S	52.8	51.1	48.7	66.2	54.3	50.8	51.0	2,C,i,b	
242550	Banbury Road, Southam	CN118S	48.7	39.1	49.5	58.4	49.2	45.8	39.5	2,A,i,c	
242627	Abbey Lane, Southam	CN118S	48.7	39.1	49.5	58.4	49.2	45.8	39.5	2,A,i,c	
242672	Abbey Lane, Southam	CN118S	48.7	39.1	49.5	58.4	49.2	45.8	39.5	2,A,i,c	
243035	Banbury Road, Southam	CN195S	39.8	38.9	50.7	68.2	41.3	37.9	38.8	2,C,ii,c	
243268	Stowe Drive, Southam	CN195S	39.8	38.9	50.7	68.2	41.3	37.9	38.8	2,C,ii,c	
243335	Stowe Drive, Southam	CN195S	52.8	51.9	58.7	76.2	54.3	50.9	51.8	2,A,i,c	
244191	Warwick Road, Southam	CN116S	54.0	41.6	50.4	63.7	54.5	50.5	42.0	2,BC,ii,c	
244339	Warwick Road, Southam	CN116S	57.0	47.6	53.4	66.7	57.5	53.5	48.0	2,C,i,c	
244689	Holywell Road, Southam	CN031L	46.1	37.7	51.5	78.9	48.3	46.6	39.5	1,BC,i,c	
245867	Warwick Road, Southam	CN041L	50.5	41.2	54.0	69.0	51.1	47.1	41.6	1,C,i,c	
245913	Warwick Road, Southam	CN041L	55.5	46.2	59.0	74.0	56.1	52.1	46.6	1,A,i,c	

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵	
			For operational sound assessment				For construction sound assessment				
			Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average of night-time $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime $L_{pAeq,12hr}$	Evening/Weekend L_{pAeq}	Night-time L_{pAeq}		
246028	Banbury Road, Southam	CN119S	64.7	56.5	74.2	76.9	65.2	61.2	56.9	2,C,i,c	
248022	Welsh Road East, Southam	CN033L	43.6	36.0	43.0	68.1	45.6	41.2	36.3	1,C,ii,c	
253196	Lower Boddington, Daventry	CS0077	48.4	39.7	43.1	62.1	48.9	45.0	38.4	1,A,iii,b	
253215	Lower Boddington, Daventry	CS0077	48.4	39.7	43.1	62.1	48.9	45.0	38.4	1,A,ii,b	
253243	Lower Boddington, Daventry	CS0077	48.4	39.7	43.1	62.1	48.9	45.0	38.4	1,A,ii,b	
253286	Priors Hardwick, Southam	CN070S	51.3	27.9	60.7	65.7	53.3	48.9	28.2	2,C,ii,c	
700625	Warwick Road, Southam	CN041L	55.5	46.2	59.0	74.0	56.1	52.1	46.6	1,A,ii,b	
700442	Wormleighton, Southam	CN071S	35.4	16.9	40.7	45.7	36.4	34.1	16.9	2,C,ii,c	
700654	Leamington Road, Southam	CN076L	55.0	50.7	61.7	79.2	55.9	53.0	50.6	1,B,ii,b	
700634	Banbury Road, Southam	CN119S	59.7	51.5	69.2	71.9	60.2	56.2	51.9	2,C,ii,c	
700635	Banbury Road, Southam	CN119S	59.7	51.5	69.2	71.9	60.2	56.2	51.9	2,C,ii,c	
901028	Lower Radbourne, Southam	CN079L	38.1	36.2	41.0	68.4	43.1	38.6	37.1	1,C,iii,b	
901029	Lower Radbourne, Southam	CN079L	40.1	38.2	39.0	66.4	45.1	40.6	39.1	1,C,iii,b	
901030	Wormleighton, Southam	CN080L	54.7	50.8	45.7	70.0	55.5	53.0	51.5	1,C,iii,b	
901031	Wormleighton, Southam	CN080L	58.7	54.8	53.7	78.0	59.5	57.0	55.5	1,A,i,b	
901032	Ladbroke, Southam	CN033L	41.6	34.0	43.0	68.1	43.6	39.2	34.3	1,A,i,b	
901033	Bascote, Southam	CN064S	43.7	31.9	42.3	59.2	45.1	41.5	32.7	2,C,ii,b	
901035	Bascote, Southam	CN030L	30.4	21.7	29.3	47.5	31.3	28.4	22.5	1,C,ii,b	

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location
2	Short-term (linked to simultaneous long-term)
3	Short-term (using profile from non-simultaneous long-term)
4	Short-term using standard (National Noise Incidence Study ⁶ or other) 24hr profile
5	Specific validated prediction
6	Predictions from other sources (Defra noise maps ⁷ , etc.).
7	Generic levels

Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for screening
C	Correction applied for distance from source
D	Minimum level cut-off applied.

Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.

Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate
b	Data are considered representative of the prevailing sound climate, but variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate, (e.g. taken from Defra noise maps, etc.).

3.3 Future baseline methodology

Construction

3.3.1 The assessment of noise from construction activities assumes a baseline year of 2017. As a conservative assumption it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017.

⁶ Building Research Establishment (2002), *National Noise Incidence Study, 2000/2001*.

⁷ Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

- 3.3.2 Due to the duration of the construction work and as the precise timing of the highest sound levels would be different in each location, using baseline sound levels for 2017 as the start of the construction period, provides a reasonable worst case assessment.
- 3.3.3 The assessment of construction traffic is based on future baseline traffic flows for 2021, as a year representative of the middle of the construction period.

Operation

- 3.3.4 Changes in existing sound sources between 2012/2013 and 2026 may result in changes to baseline sound levels.
- 3.3.5 For major transportation sources, data for existing and future baseline operations have been reviewed. Where changes may occur between the existing baseline and future baseline (2026) situations, expected changes in baseline sound level have been derived. For example, expected changes in traffic flow, composition and speed have been used to calculate changes in sound emission from roads using the methodology from the Calculation of Road Traffic Noise⁸.
- 3.3.6 The changes to major sound sources which have been identified in this area are summarised in Table 3.

Table 3: 2026 future baseline changes in sound sources

Sound Source affected	Cause of change in levels	Change in sound levels (existing baseline to 2026 future baseline) (dB)	
		Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}
Banbury Road	Increased traffic flow	0.7	0.2
A425 Daventry Road	Increased traffic flow	0.3	0.2
A423 Banbury Road in the vicinity of Ladbrooke	Increased traffic flow	0.6	0.2
A423 Banbury Road through Southam	Increased traffic flow	0.6	0.2
A425 Leamington Road through Southam	Increased traffic flow	0.6	0.4
B4451 Kineton Road	Increased traffic flow	0.7	0.2
A425 Leamington Road to Ufton	Increased traffic flow	0.6	0.2
A425 Southam Road through Ufton	Increased traffic flow	0.8	0.5

⁸ Department of Transport (1988), *Calculation of Road Traffic Noise*.

4 References

Building Research Establishment (2002), *National Noise Incidence Study 2000/2001*.

Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

Department of Transport (1988), *Calculation of Road Traffic Noise*.